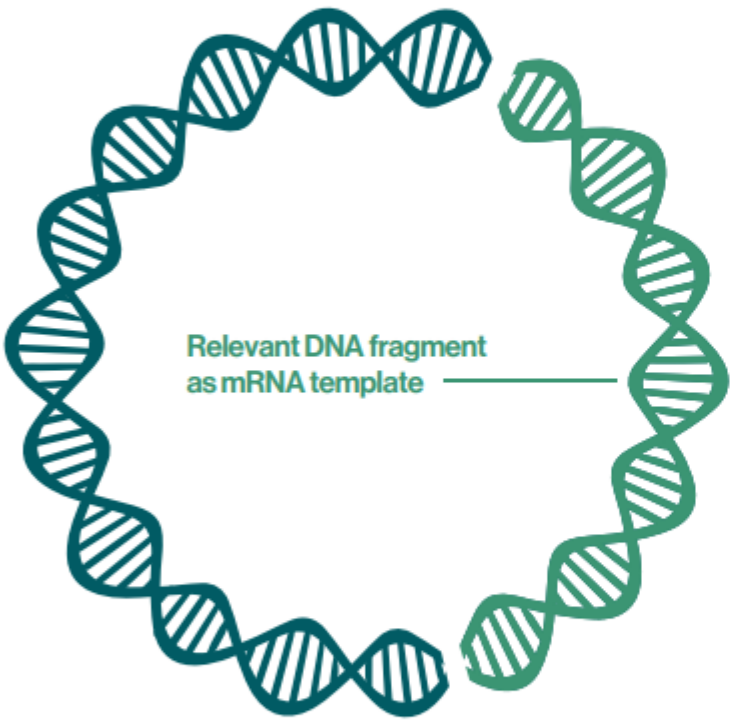
What is plasmid DNA?



Natural carrier of information:

Plasmids are small, ring-shaped DNA fragments that can occur in bacteria in addition to their genomic DNA.

Additional biologic capabilities:

Plasmids often contain genetic information that can provide the bacterium with specific capabilities, such as antibiotic resistance.

DNA is required for mRNA production:

To produce mRNA, a DNA template is required. The biopharmaceutical industry uses plasmids for this purpose. A part of the plasmid DNA encodes for the relevant protein of interest, e. g. the spike protein of SARS-CoV-2. The majority of the plasmid is used to shape the DNA into the required ring form. The ring-shape is essential for the amplification of the relevant DNA sequence.

How does plasmid production work?